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Status and conservation of albatrosses and the larger petrels in South Africa

STATUS AND CONSERVATION OF ALBATROSSES AND THE LARGER PETRELS IN SOUTH AFRICA

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INTRODUCTION

South Africa is one of the five original parties to the Agreement on the Conservation of Albatrosses and Petrels (ACAP), having signed the agreement without reservation in respect of ratification on 6 November 2003. The country is a range state for 19 of the 28 species (new taxonomy) listed in Annex 1 of ACAP. Nine of these species breed within South African territory (Table 1).

In this Information Paper we review the status and conservation within South Africa (including its territorial and Exclusive Economic Zone waters) of those species of albatrosses and petrels that are listed on Annex 1 of ACAP. The paper is set out using the same heads, and covering relevant sub-heads, as used in the Action Plan (Annex 2) of ACAP (see also Article VI).

SPECIES CONSERVATION

Species Conservation

Albatrosses and petrels (Diomedidae and Procellariidae) occurring within South African Territory are fully protected by the Sea Birds and Seals Protection Act (No. 46 of 1973), including on islands and in territorial and fishing zone (now EEZ) waters. The Act states that no person may “pursue or shoot at or willfully disturb, kill or capture any seabird...or willfully damage the eggs of any sea bird upon any island or collect upon or

remove from any island any such eggs or the feathers of any sea bird or any guano”, except where a permit has been issued.

No commercial trade in or traditional use by indigenous peoples of albatrosses and petrels or their eggs (or any other products) are known to have occurred in South Africa, although historically exploitation, including of eggs, for immediate human consumption took place by sub-Antarctic sealers in the first half of the 19th century (Cooper & Avery 1986, Cooper & Headland 1991) and at a low level by meteorological teams on Marion Island in the early 1950s (references in de Villiers *et al.* in press).

The 1973 Act is currently being revised by way of the publication for public comment of a draft National Policy for Seals, Seabirds and Shorebirds (*Government Gazette* No. 26189, 26 March 2004; www.environment.gov.za). The national policy confirms that procellariiform seabirds will remain fully protected within South African Territory (including EEZ waters) in the new Act.

South Africa’s Red Data Book for birds (Barnes 2000) listed only three South African-breeding ACAP species as threatened, with an additional six classified as near-threatened (following World Conservation Union (IUCN) categories of threat). However, nearly all of the 28 ACAP species are now considered globally threatened (BirdLife International 2004), including seven of the nine species that occur within South Africa as breeding species (Table 1).

The National Environmental Management: Biodiversity Act (No. 10 of 2004; NEMB) allows for the declaration of threatened (Critically Endangered, Endangered and Vulnerable, following the IUCN criteria) and protected species. A protected species is defined as “any species which is of such high conservation value or national importance that it requires national protection”. This definition is reasonably regarded as covering all nine ACAP species that breed within South African Territory (Crawford & Cooper 2003). The NEMB also allows for the production of “biodiversity management plans” (considered equivalent to species action or recovery plans) for proclaimed threatened and protected species. To date, no species have been proclaimed, but this provision is potentially a powerful tool for furthering the conservation of South Africa’s ACAP species.

Non-native Taxa

South Africa practices strict quarantine procedures to mitigate against the introduction of non-native taxa, including disease-causing organisms, to terrestrial habitats of albatrosses and petrels under its authority. The South African National Antarctic Programme (SANAP) of the Department of Environmental Affairs & Tourism (DEAT) is responsible for the management of the sub-Antarctic Prince Edward Islands (PEIs, comprising Marion Island and Prince Edward Island), utilizing advice received from the Prince Edward Islands Management Committee (PEIMC) and in terms of a management plan for the island group adopted in 1996 (PEIMPWG 1996).

SANAP procedures include, *inter alia*, regular inspections by PEIMC-appointed Conservation Officers of storage and supply facilities and supply ships in Cape Town; regular fumigation against invertebrates and provision of permanent poison-bait stations for rodents at such facilities and vessels; rat guards on hawsers in continental ports; and inspections for invertebrates and plant propagules and cleaning with fungicides and bactericides of personal footwear, protective clothing and field packs and bags aboard vessels sailing to the PEIs (PEIMPWG 1996, Cooper *et al.* 2003).

Supply and consumption of poultry products (irradiated chicken eggs and deboned chicken meat only) is restricted to the research base on Marion Island to reduce the risk of introducing avian diseases. All poultry wastes (including egg shells) are frozen and returned to continental South Africa for disposal. No live poultry has been kept at Marion Island since 1972 (Watkins & Cooper 1986).

Very strict procedures are followed to avoid the transfer of biota between Marion and uninhabited Prince Edward Island, which has always been free of introduced mammals (Watkins & Cooper 1986).

The PEIMC has commenced a risk-assessment analysis of SANAP's quarantine procedures, in order to work towards an operations manual, that will move away from the generally reactive approach currently in operation. As the first part of this exercise, "best-practice" information is currently being sought from other nations that manage sub-Antarctic and southern cold-temperate islands, as well as from countries that manage seabird islands elsewhere in the world.

The feral cat *Felis catus* population of Marion Island was successfully eradicated in 1991, following a long campaign (Bester *et al.* 2002). This led to the improved breeding of several species of burrowing petrels (Cooper *et al.* 1995). Although White-chinned Petrels *Procellaria aequinoctialis* did not show an immediate increase in breeding success following the removal of cats from Marion Island (Cooper *et al.* 1995), breeding success was greater in artificially maintained cat-free areas prior to the removal of cats (van Rensburg & Bester 1988), and breeding success from 1996/97 to 2000/01 was almost twice that prior to the removal of cats (PGR unpubl. data). Preliminary estimates of adult survival based on a six-year study colony yield low estimates (*c.* 88%), but estimates are probably biased by emigration from the study area, due in part to disturbance caused by monitoring (PGR unpubl. data). Susceptibility to disturbance complicates detailed monitoring of the demography and population dynamics of this burrow-nesting species.

Research continues to address the effects of introduced House Mice *Mus musculus* on the PEIs (e.g. Jackson & van Aarde 2003, van Aarde *et al.* 2004) and a SANAP workshop was held in 1995 to consider the feasibility of eradication (Chown & Cooper 1995).

HABITAT CONSERVATION AND RESTORATION

Land-based Conservation

The only breeding locality for ACAP-listed albatrosses and petrels within South Africa is at the Prince Edward Islands in the southern Indian Ocean. The PEIs above low-water mark were declared a Special Nature Reserve in 1995 in terms of the then Environment Conservation Act (No. 73 of 1989) (*Government Gazette* No. 16796, 3 November 1995), the highest level of protection that can be afforded under South African legislation. Landing without permit on the PEIs is prohibited in terms of the Sea Birds and Seals Protection Act.

The Prince Edward Islands have been declared an Important Bird Area (Barnes & Huyser 1998, Barnes *et al.* 2001) and are thus considered to be of international importance, including for the ACAP species that occur there.

The PEIMC has initiated a revision of the islands' management plan. It is expected that this revision will consider setting minimum approach distances to breeding seabirds, following findings of an ongoing study of the effects of human disturbance (de Villiers *et al.* in press).

The PEIMC has proposed that the PEIs be nominated as both a World Heritage Natural Site and as a Ramsar Wetland of International Importance (Crawford & Cooper 2003). Currently, a document for the former nomination is under revision prior to submission to the World Heritage Convention, and the latter proposal has been accepted in principle by DEAT.

Conservation of marine habitats

South Africa's territorial waters extend to 12 nautical miles around the continent and the Prince Edward Islands. An Exclusive Economic Zone (EEZ) extending 200 nautical miles offshore has also been proclaimed.

The PEIMC has proposed that the Prince Edward Islands Special Nature Reserve be expanded from the current low-water mark to include territorial waters out to 12 nautical miles in terms of the National Environmental Management: Protected Areas Act (No. 57 of 2003 (NEMPA), or alternatively as a Marine Protected Area in terms of the Marine Living Resources Act (Act No. 18 of 1998) (Crawford & Cooper 2003). Currently, commercial fishing is not allowed within eight nautical miles of the PEIs so as to protect inshore-foraging seabirds from longline mortality.

On 28 July 2004, the Minister of Environmental Affairs & Tourism, Marthinus van Schalkwyk, announced that it was the government's "firm intention to proclaim a major new MPA [Marine Protected Area] in the waters around the Prince Edward and Marion Islands which will become effectively one of the largest marine protected areas in the world. As one of the first steps in this process we are seriously considering extending the

no-fishing zone around the islands from 8 to 12 nautical miles” (Press release, Ministry for Environmental Affairs & Tourism, 28 July 2004). It is thus expected that the PEIs will in due course be surrounded by a protected area that exceeds territorial waters and extends into the EEZ. With financial support from WWF South Africa, a conservation strategy document for a protected area around the PEIs is being prepared by the Avian Demography Unit, University of Cape Town for submission to the PEIMC in 2005.

Four new MPAs have recently been declared around the coast of continental South Africa (www.environment.gov.za), bringing the total to 23 MPAs and offering enhanced protection to 18% of the total coastline, but these do not extend far enough out to sea to have any significant effect on the conservation of albatrosses and petrels.

South African waters (including around the PEIs) will soon be patrolled by new fisheries and environmental patrol vessels with extended blue-water capabilities and powers of seizure and arrest. These vessels will allow a greater opportunity for international cooperation in chasing and arresting Illegal, Unregulated and Unreported (IUU) or ‘pirate’ fishing vessels in South African territorial and EEZ waters. Already, cooperative efforts have taken place with Australia and France in the Southern Ocean, leading to the successful arrest of three fishing vessels. Bilateral negotiations are well advanced with these nations to strengthen such joint actions (Press release, Ministry for Environmental Affairs & Tourism, 28 July 2004).

South African fisheries that interact with albatrosses and petrels are all rigorously managed by governmental regulations, including licensing and quota systems (Cooper & Ryan 2003). The South African demersal trawl fishery for hake *Merluccius* sp was awarded accreditation by the Marine Stewardship Council in April 2004 as a well-managed and sustainable fishery, one of the first very large fisheries to be so certified throughout the world (www.msc.org). However, a condition of this certification is that seabird interactions be investigated and if found to be significant, mitigation measures should be adopted (see below).

Legal fishing for Patagonian Toothfish *Dissostichus eleginoides* in the vicinity of the PEIs is also well-managed, with a quota system in place (Cooper & Ryan 2003).

MANAGEMENT OF HUMAN ACTIVITIES

Impact Assessment

An environmental impact assessment (EIA) has been undertaken of commercial tourism at the PEIs (Heydenrich & Jackson 2000). The assessment concluded that tourism (which currently does not take place) should not be allowed without further study of its likely effects, which would include disturbance to seabirds caused by eco-tourism. However, the NEMPA Act, unlike its predecessor, does not allow for tourism within Special Nature Reserves. Therefore, unless the conservation status of the PEIs is down-

graded by Parliament, or the Act itself is amended, tourism will not take place, and as a consequence, the planned effects study will not now be undertaken.

A new meteorological and research station is currently being built on Marion Island. Construction procedures are overseen by contracted Project Environmental Officers (PEOs), appointed by DEAT in terms of a “scoping study” (Environomics 2002) broadly equivalent to an EIA. PEO duties include ensuring that avoidable disturbance to seabirds does not occur during construction, as well as addressing such matters as quarantine procedures, pollution and trampling.

Incidental Mortality in Fisheries

The impacts by South African longline fisheries on albatrosses and petrels have been assessed by way of the production of a draft National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds), following guidelines set out by the Food and Agriculture Organization of the United Nations (FAO) (Cooper & Ryan 2003). The plan was produced under contract utilizing funding received from the FAO’s Committee on Fisheries. The NPOA-Seabirds includes a detailed assessment of the levels of seabird mortality caused by South African fisheries (see also Barnes *et al.* 1997, Nel *et al.* 2002c, Ryan *et al.* 2002, in press). It also describes mitigation measures currently required and makes suggestions for their improvement to reduce mortality below the level of 0.05 birds/thousand hooks (see also Ryan & Watkins 2002). The draft plan is currently under consideration by DEAT prior to its formal adoption.

Preliminary observations indicate that there is some mortality of Shy *Thalassarche cauta* and Black-browed Albatrosses *T. melanophrys* due to warp collisions in the South African hake fishery (SLP & PGR unpubl. Data). Should the levels of mortality be found to be significant, mitigation measures such as modified bird-scaring lines and various management regimes for the treatment of offal and discards will be tested.

South Africa contributes to the deliberations of CCAMLR on seabird mortality from fishing in the Southern Ocean, through the *ad hoc* Working Group on Incidental Mortality caused by Fishing (WG-IMAF). The South African fishery for toothfish around the Prince Edward Islands currently operates in full accord with CCAMLR regulations, including having 100% observer coverage (see also Nel *et al.* 2002c). BirdLife South Africa will submit information on seabird mortality in the South African pelagic longline fishery to the next meeting of the International Commission for the Conservation of Atlantic Tunas (ICCAT).

Pollutants and Marine Debris

South Africa complies with CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources) and MARPOL (xxx) Convention regulations that place restrictions on at-sea dumping of pollutants, including plastics, bait-box strapping and fish hooks. Avoiding disposal of fish hooks at sea is also addressed in South Africa's NPOA-Seabirds (Cooper & Ryan 2003).

Marine debris shoreline surveys and recording of anthropogenic materials found in association with seabirds and their breeding sites have been regularly undertaken at Marion Island since 1984 (Ryan 1987a, Nel & Nel 1999), with the findings being submitted intermittently to the Scientific Committee of CCAMLR. Plastic ingestion by seabirds has been studied at Marion Island (Ryan 1987b). Several albatrosses and giant petrels *Macronectes* spp. have been killed by ingestion of anthropogenic matter (Nel & Nel 1999).

Whereas oil pollution is a well-known problem in South African continental waters (and a few minor spills have occurred at Marion Island) the only ACAP birds known to have been oiled within South African waters are two White-chinned Petrels *Procellaria aequinoctialis* (Morant *et al.* 1981, Cooper & Condry 1988, Adams 1994, Crawford & Cooper 2003, Parsons & Underhill in press).

It is considered that mineral (oil, gas and diamond) exploration and exploitation activities in southern African continental waters (no such activities have occurred around the PEIs) have not, and are unlikely to cause serious harm to albatrosses and petrels (Cooper 1995a,b, 1996, 2001, Griffiths *et al.* 2004).

Disturbance

As outlined above, commercial tourism is not permitted at the PEIs.

In terms of the PEIMP, breeding habitats of ACAP species at the PEIs may be zoned as Special Entry Areas (SEAs; Zone 4). Human entry to a SEA is prohibited without a permit issued on the advice of the PEIMC. Currently, this level of protection is extended to the entirety of Prince Edward Island, and to all breeding colonies of Southern Giant Petrels *Macronectes giganteus*, (with a 100-m boundary), and all long-term study colonies of Wandering *Diomedea exulans* and Grey-headed *Thalassarche chrysostoma* Albatrosses on Marion Island. Zone-4 permits are normally only issued for *bona fide* scientific purposes and include restrictions on party size, number of visits a year, duration of stay and prohibition of the erection of permanent or temporary structures (PEIMPWG 1996). The revision of the PEIMP will consider whether any additional ACAP species on Marion Island should have their breeding sites zoned as SEAs

Commercial seabird tours out of continental harbours (primarily Cape Town and Durban) are not thought to cause disturbance to seabirds, although chumming is used to attract birds to vessels (PGR pers. obs.).

Scientific activities carried out at breeding sites of seabirds at the PEIs may only take place after issue of a research permit by SANAP, acting on the advice of the PEIMC, and only for projects that have been approved by SANAP. *Inter alia*, approval of such projects requires the submission of a statement from the research unit's ethics committee or equivalent, that ensures that all research activities minimize the level of disturbance to study animals.

RESEARCH AND MONITORING

Trends in the populations of most of the ACAP species breeding at the PEIs have been studied over several decades (Cooper *et al.* 2001, Nel *et al.* 2002a, 2003, Crawford *et al.* 2003, Petersen 2003, Ryan *et al.* 2003, Table 2), although far less is known for the populations of Prince Edward Island. Numbers of Dark-mantled Sooty Albatrosses *P. fusca*, Southern Giant Petrels *M. giganteus* and White-chinned Petrels at Marion Island have shown decreases over study periods, although the count for Dark-mantled Sooty Albatrosses was higher in 2003/04 than for several seasons. Numbers of Wandering Albatrosses, Grey-headed Albatrosses, Light-mantled Sooty Albatrosses *Phoebastria palpebrata* and Northern Giant Petrels *Macronectes halli*, appear stable over time, but often with large fluctuations in numbers breeding each year (Table 2).

The diets and aspects of the foraging ecology of most ACAP species have been studied at Marion Island (Cooper & Brown 1990). In recent years satellite tracking devices have been deployed on Wandering and Grey-headed Albatrosses to study at-sea movements, especially in relation to longline fisheries (Nel *et al.* 2000, 2001, 2002b).

GLS devices have also been deployed on Wandering and Grey-headed Albatrosses at Marion Island and the results await publication. Of the 24 Wandering Albatrosses that gave useful information, 15 remained mainly in the south-western Indian Ocean, three also ventured to the middle of the South Atlantic, two ranged across to Australia, one ranged from the mid-Atlantic to Australia, and three circumnavigated the world. Of the 13 Grey-headed Albatrosses, nine circumnavigated the world, one ranged between the mid-Atlantic and Australia, and three remained locally in the south-western Indian and south-eastern Atlantic Oceans (PGR unpubl. data). This research is a co-operative effort with the British Antarctic Survey (UK).

Co-operative genetic studies with Australia and New Zealand are elucidating from which breeding populations are derived the albatrosses and larger petrels that visit South African waters. All 24 longline-killed Shy/White-capped Albatrosses *Thalassarche cauta/steadii* from South African waters that have been tested using genetic markers were from the New Zealand population (Abbott *et al.* submitted ms.), although there are ringing recoveries to show that young birds from the Australian population can reach South African waters.

South Africa has also conducted co-operative research with the UK on ACAP species at Gough Island, a UK Possession in the South Atlantic (e.g. Glass *et al.* 2000, Ryan *et al.* 2001, Cuthbert *et al.* 2003, 2004, in press, Cuthbert & Sommer in press).

An assessment of incidental mortality occurring on longline (both pelagic and demersal) vessels operating within South African waters is being undertaken. Trials in order to determine optimal sink rates are in progress as well as are bird-scaring line demonstration trials. On completion of these trials bird-scaring lines will be distributed to all the South African pelagic longline vessels by BirdLife South Africa.

EDUCATION AND PUBLIC AWARENESS

South Africa continues to educate and increase public awareness in relation to the conservation status of ACAP species through regular communications by government departments, academia and non-governmental organizations via the electronic, visual and print media with the scientific, conservation and fishing communities, as well as with the general public. Examples of products include species identification posters, press releases on web sites and by agencies, list servers and articles in popular and conservation/wildlife magazines, as well as interviews with radio, TV and the press. As a consequence, public knowledge about the conservation status of South Africa's ACAP species and the efforts being made to improve their situation is slowly growing, both within the country and internationally.

A fisheries observer training programme has been developed and implemented by BirdLife South Africa. The course aims at informing fisheries observers of seabird conservation issues, how and why mitigation measures work, as well as providing training in seabird identification. Development of a training manual and video are underway and will be available in English, Afrikaans and Portuguese for distribution within South Africa, Namibia and Angola.

IMPLEMENTATION

South Africa contributed to the implementation of ACAP by hosting the second and final negotiation meeting, held in Cape Town in January 2001. Previous to this South African-based biologists had been active internationally in addressing the issue of seabird mortality caused by longline fisheries at a number of fora (e.g. Brothers *et al.* 1999, Cooper 2000).

South Africa collaborates with several countries to address the problem of IUU fishing in the Southern Ocean (see above). South African-based biologists and conservation managers continue to make and foster informal contacts with their colleagues in other countries to further the implementation of ACAP, including at meetings of inter-governmental organizations (e.g. Antarctic Treaty, Bonn Convention, FAO, Scientific Committee on Antarctic Research), at Regional Fisheries Management Organizations of

which South Africa is a Party or has attended meetings as an observer (e.g. CCAMLR, ICCAT, IOTC, SEAFO) and at scientific conferences and workshops. International collaboration also takes place through South African membership of or involvement with a number of international non-governmental organizations, including ASOC (Antarctic and Southern Ocean Coalition), BCLME (Benguela Current Large Marine Ecosystem Programme), BirdLife International, Southern Seabird Solutions, the World Conservation Union and WWF International.

A connection between South Africa and New Zealand exists as a result of Shy/White-capped Albatrosses foraging in South African waters (see above). Funding has been received by BirdLife South Africa to support its Seabird Conservation Programme from WWF New Zealand and Southern Seabird Solutions. Additionally, a regional programme to combat incidental mortality in longline fisheries between South Africa, Namibia and Angola (with South Africa taking the lead) has been funded by the BCLME via WWF South Africa (Nel 2004).

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Table 2

Numbers of breeding pairs of surface-nesting ACAP species counted at or estimated for Marion Island, 1980s and 1994/95-2003/04. Estimates for the 1980s are from Cooper & Brown (1990), for 1994/95-2002/03 from Crawford *et al.* (2003) and for 2003/04 from unpublished data

Period or season	1980s	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04
Complete counts											
Wandering Albatross	1533	1794	1765	1741	1910	1760	1611	1860	1869	1593	1723
Grey-headed Albatross	5037	6217	5219	6600	7641	7728	5573	6757	6229	5005	5691
Dark-mantled Sooty Albatross	2055			1701	1541	1775	1012	1269	564	721	1298
Light-mantled Sooty Albatross	201				334				179		445
Northern Giant Petrel	314	411		387	453	364	275	341	140	196	346
Southern Giant Petrel	2891	2947		1198	2173	1381	1468	1473	1430	1759	1446
										272	152
										25	20
										10	9
										12	31
Partial counts											
Light-mantled Sooty Albatross				249	202	157	130	181	155	88	233